

Document Owner: Manager Customer Planning

Using Valve Exercising Trailer

Scope/Purpose: It is extremely important to be able to operate valves reliably, when an emergency arises, sections of a distribution system may need to be shut down without delay. However, when a valve is not used over a period of time it can seize-up from corrosion making the valve inoperable. This is frustrating for the person trying to open or close the valve, but more importantly it poses significant risks for the community who rely on water utilities to keep the water supply safe (for consumption and other purposes such as firefighting). Regular valve exercising can also extend the life of the asset.

Health & Safety and Operational Information

Hazard Indicators



Personal Protection



Health and Safety Information

- Health and Safety documentation.
- Generic Traffic Management Plans or site-specific Traffic Management plan.

Operation's & Maintenance Documentation

- Corridor Access Requests (CAR) and WIP Permits (site specific or generic/global)
- Service plans (B4uDig)
- Design drawings
- Site plans
- Notification Calling Cards

Customer Information (Confidential)

- Blow Back at risk customers (WWL)
- Vulnerable customers (DHB supplied list)
- Priority customers (WWL)

Priority Customer Categories

- Schools and Childcare
- Commercial premises
- Hospitals
- Retirement Homes/Villages
- Correction Facilities
- Military Installations
- Oil and Gas Refinery

Emergency Procedure / Escalation

- Make "Site Safe" and isolate risks to people or property with resources at hand
- In event of service strike to utility/energy source (e.g. fuel, Gas, Power, Water etc.) report immediately to team leader
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Additional Consideration

- Specialised equipment needed – Valve Exercising Trailer and data logger for network values.
- Fulton Hogan Work Instruction for Disinfection of Water Systems

Escalate if extra resources required or problems occur!

- Escalate to Team Leader and inform of the issues faced and/or expected resources required if necessary.

Required Skills, Competencies (Qualifications and/or Certifications)

One member of crew holds NZ Certificate in Infrastructure Works Level 1 (Water and Wastewater Strand)

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Standard Operating Procedure

Required Equipment

Equipment and Information	Details
Fully Equipped Vehicle	Ensure vehicle, plant, equipment and materials appropriate to the day's work schedule is available
Vulnerable & Priority List	Notification of priority customers (impact and duration)
Specialist Equipment	Valve Exercising Trailer and data logger
PPE	Ensure appropriate PPE is available for the work.

Prepare to do the work

Action	Action Details
Pre Start Process	Complete the Reactive Maintenance Daily Pre Start Reminder: If and when the valve is nice and free, turn it slowly to avoid water hammer. If you open or close a valve too fast the line could rupture.
Compliance	Traffic Management Plan - Where required, TMP to be in place prior to work starting. TMP to be accessible on site.
Customer Notification	Because debris can be stirred up during valve exercising, notify the public before starting the process. This will keep the dirty water complaint calls down.
Route Planning	Valve route planned out to minimise service interruptions.

Perform the work

Action	Trade	Action Details
Inspect	Serviceperson	Open valve cover and undertake visual inspection of chamber and surrounds, ensure free of vegetation and have good access/security. Make note of any problems, i.e. water leaks, damaged chamber. Clean out chamber.
	Serviceperson	Confirm initial valve status (open or closed) To determine if a valve is closed, the leak detector, or simply an ear to the valve key, can be used.
	Serviceperson	Attach trailer arm to valve. Use the lowest torque (turning force or rational force) setting possible and allow valve exerciser to jog valve.
Exercise Valve	Serviceperson	Allow valve exerciser to jog and then move valve through several cycles until the torque is normalised. Once the valve is fully closed, it should be opened a few turns so that high-velocity water flowing under the gates can move the remainder of the sediment downstream with more force and clear the bottom part of the valve body for seating. Open a nearby fire hydrant to flush the debris that is being cleaned from the gate valves. Fully close the valve again.
Recording data	Serviceperson	Check data logger has recorded rotation direction, torque and turns to open/close valve. Record inlet/outlet pressure reading on gauge (where fitted) in kPa. Confirm/record detailed information on the valve type – update if not as plans/GPS suggests. Photograph the valve and surrounding location (if not already recorded)
Common problems	Serviceperson	Valve turning gets harder - The reason for a cautious approach to valve exercising is that debris and sediment often build up on the gates, stem, and slides. If this material is compacted while the valve is being closed, the torque required to close the valve continues to build as the material is loaded, so slow and steady . The process outlined above 'scrubs' the stem and other parts by the series of back-and-forth motions, and water in the system can flush the debris that has broken loose away from the stem gate and slides or guides.
Close Out	Serviceperson	If valve function is not acceptable and repair or replacement is required ensure additional work is scheduled in work management system.